

THE

MONTHLY REPOSITORY,

AND LIBRARY OF

Entertaining Knowledge.

VOL. IV. AUGUST, 1833. No. 3.

WINNIPISEOGEE.

This lake is one of the most beautiful sheets of water in the world. It is surrounded by the highlands and mountains of a most picturesque country, in the interior of the state of New Hampshire. The lake is about twenty-two miles in length, and not far from eight miles in breadth; the waters are deep, pure and sweet, supplied by mountain rills and subjacent springs, and when drawn but a few feet from the surface, are cool and refreshing in the hottest season of the year. The lake, abounds in excellent fish of all kinds common to northern waters. What adds greatly to the beauties of the lake are the numerous islands which are scattered about in it, probably the tops of greater or smaller mountains, whose huge masses of granite were but half engulfed in the convulsions which in some early period of time, opened the abyss into which the surrounding waters flowed. These islands are generally well wooded, and many of them are susceptible of high culture. The last royal governor of New Hampshire had a princely mansion on the borders of this lake which was his favourite summer residence. Winnipiseogee has been compared to Lake George; there is a similarity in the purity of its waters, but the former greatly exceeds the latter in magnitude, covering nearly three times the square miles. There is also some resemblance in the scenery; that of Lake George is more wild and savage than that of Winnipiseogee, the latter is more romantic and diversified;

and from several points of observation, vastly more extensive. The circumjacent country embraces a most intelligent, industrious and hardy race of men. This lake, and the neighbouring waters were the favourite resorts of the Indians; they spent their summer, in fishing in them, and basked away on their banks, their hours of ease, in the months when they rested from the chase. These children of the forest had the most exquisite taste for rural scenery; their villages and small settlements all prove the truth of this remark; and the names they gave to favourite lakes, rivers and shores, were expressive, delicate and appropriate: OHIO, is said to mean *the most beautiful of rivers*; NAHANT *the lover's walk*; WINNIPISEOGEE *the smile of the Great Spirit*.

All these translations may be fanciful, but there cannot be a doubt that beautiful waters and favourite haunts, were named by them with taste and imagination. The various tribes on the borders of this lake were often engaged in fierce wars; and if the water-gods had the privilege of antiquity to communicate with the human race, we might have the story of feats of valour worthy the poet's song and the historian's page. A few traces of the red men only remain. The hum of industry and the sounds of joy and peace echo over the graves of the sons of the wilderness; but the beauties of the lake can never be lost; they are a feature of nature that civilization may slightly change, but can never destroy.

The view here given, is taken from a headland on the banks of the Winnipiseogee. Beneath the eye of the spectator lies the placid lake, circled with its wild shores, and far in the distance rise the gigantic peaks of Mount Washington and Chocorua, two of that majestic brotherhood, the White Mountains, the loftiest in all the eastern half of North America.

To equal robbery with murder, is to reduce murder to robbery; to confound in common minds the gradations of iniquity, and incite the commission of a greater crime, to prevent the detection of a less.—*Dr. Johnson.*

CABINET OF NATURE.



MONTSERRAT.

Here, 'midst the changeful scenery, ever new,
Fancy a thousand wond'rous forms describes,
More wildly great than ever pencil drew;
Rocks, torrents, gulfs, and shapes of giant size,
And glittering cliffs on cliffs, and fiery ramparts rise.

Beattie.

THIS Spanish mountain, which has been so long celebrated on account of the singularity of its shape, but chiefly for its convent and its numerous hermitages, is nine leagues north-west of Barcelona, in the province of Catalonia. It is in height only 3,300 feet above the level of the sea, but it commands an enchanting prospect of the fine plain of Barcelona, extending to the sea, as well as of the Islands of Majorca and Minorca, distant 150 miles.

Towards Barcelona this mountain presents a bold and rugged front; but on the west, towards Vacarissas, it is almost perpendicular, notwithstanding which, a carriage-road winds round to the convent, which is placed in a sheltered recess among the rocks, at about half the height of the mountain. Llobregat roars at the bottom; and the rock presents perpendicular walls from the edge of

the water ; but above the convent, the mountain divides into two crowns or cones, which form the most prominent features ; while smaller pinnacles blanch and bare and split into pillars, pipes, and other singular shapes, give a most picturesque effect. Here are seen fourteen or fifteen hermitages, which are scattered over different points of the mountain, some of them on the very pinnacles of the cones, to which they seem to grow, while others are placed in cavities hewn out of the loftiest pyramids. The highest accessible part of the mountain is above the hermitage of St. Maddelena, the descent from which is between two cones, by a flight of steps, called Jacob's Ladder, leading into a valley which runs along the summit of the mountain. The cones are here in the most grotesque shapes, the southern one being named "the Organ," from its resemblance to a number of pipes.

At the extremity of this valley, which is a perfect shrubbery, and on an eminence, stands the hermitage of St. Jerome, the highest and most remote of all ; and near it is the loftiest station of the whole mountain, on which is a little chapel dedicated to the Virgin. From this elevated pinnacle the prospect is vast and splendid.

Although the elements have wreaked all their fury on these shattered peaks, yet nature has not been sparing in her gifts ; the spaces between the rocks being filled up with close woods, while numerous evergreens, and other plants, serve to adorn the various chasms, rendering them valuable depositories of the vegetable kingdom. Few, indeed are the evergreens of Europe which may not be found here ; and when the mountain was visited by Mr. Swineburne, the apothecary of the convent had a list of four hundred and thirty-seven species of plants, and forty of trees, which shoot up spontaneously, and grace this hoary and venerable pile. There being two springs only on the mountain, there is a scarcity of water, which is chiefly collected in cisterns ; an inconvenience, however, which is in a great measure counterbalanced by the absence of wolves, bears, and other wild beasts.

Captain Carlton, an Englishman, who visited Montser-

rat some years ago ascended to the loftiest hermitage, that of St. Jerome, by the means of spiral steps hewn out in the rock on account of the steep acclivity. This he observes could not in his time be well accomplished by a stranger, without following the footsteps of an old ass, who carried from the convent a daily supply of food to the hermits. This animal having his two panniers stored with the provisions divided into portions climbed without a guide, and having stopped at each of the cells, where the hermit took the portion allotted to him, returned back to the convent. He found that one of these hermits, to beguile the wearisomeness of his solitude, had contrived so effectually to tame the birds which frequented the groves surrounding his hermitage, that he could draw them together with a whistle, when they perched on his head, breast, and shoulders, taking the food from his mouth.

The convent is situated on the eastern side of the mountain, which seems to have been split by vast torrents of water, or by some violent convulsion of nature; in this way a platform has been formed in the cleft, sufficiently ample for the purpose of its construction. It is one of the forty-five religious houses of the Spanish congregation of the order of St. Benedict. The monks are bound to supply food and lodging for three days to all pilgrims who come up to pay their homage to the Virgin; besides which, they entertain the hermits on Sundays. The latter, who make a vow never to quit the mountain, take their stations by seniority, the junior hermit being placed at the greatest distance from the convent, and descending progressively as the vacancies happen. They are not altogether idle, taking pains to rival each other in making basket-works and other fanciful productions, which they display with great affability to their visitors. They assemble every morning to hear mass and perform divine service, in the parish-church of St. Cecilia, which lies considerably above the convent; and twice a week they confess and communicate. They wear their beards long, and are clad in brown.

The church of St. Cecilia is a gloomy edifice, the gilding of which is much sullied by the smoke of eighty-five

silver lamps, of various forms and sizes, suspended round the cornice of the sanctuary. For the supply of these with oil, funds have been bequeathed by devotees. The choir is decorated with wood carvings, curiously wrought, representing the most prominent passages in the life of Christ.

NATURAL PHILOSOPHY.

HYDROSTATICS.

The next department of Natural Philosophy of which we shall treat is hydrostatics. This science treats of the mechanical properties of fluids. Its laws are very simple, and a knowledge of them, will enable us to comprehend some of the most wonderful phenomena of nature. The fundamental truth on which the whole science rests, is this: the particles of fluids are so connected with each other, that they press equally in every direction, and are equally pressed upon. From their very slight cohesion, and from their gravity, it follows that when a fluid is left to itself, all its parts rise or fall, so as to settle at the same level, no part standing above, or sinking below the rest. Hence if we pour water into a tube bent like a U, it will stand at the same height in both limbs, whether they be of the same diameter or not, and thus a portion of the liquid however small, will resist a portion however large and balance it. From these considerations two most important conclusions follow, derived both from reasoning, and from innumerable facts of daily occurrence. The one is, that water though when unconfined, can never move above its level, at any point, and never can raise upwards, will, yet when confined in pipes or other channels, rise to the height from which it came, that is to the level of its source; and upon this principle, depend all the useful contrivances for conveying water by pipes, in a way far more easy, cheap, and effectual, than those vast buildings called aqueducts, by which the ancients carried their supplies of water, in artificial rivers, over arches for many miles. The other conclusion is not less true

but far more extraordinary, and indeed startling to belief: it is that the pressure of water upon any object against which it comes, or any space on which it rests, is not in proportion to its quantity but to its height.

The properties in virtue of which liquids maintain their level, and transmit pressure, are the cause of most of the phenomena exhibited in the various motions and changes to which water is subject on the surface of the earth. The rain which falls on the tops of mountains and other elevated places, if it encounter a soil not easily penetrable by water, collects in rills and small drains, which, soon uniting, form streams and rivulets. These, descending along the sides of the elevations, seeking a lower level gradually encounter others, with which they unite, and at length swell into a river. The waters, still having a tendency to descend, are governed in their course by the slopes of the ground over which they have to pass. They usually proceed in a winding channel, directed by the varying form of the surface of the country, always taking that course which most accelerates their descent. Sometimes they widen and spread into a spacious area, which losing the character of a river, is denominated a lake; again contracting, they resume their former character; and after being swelled and increased by tributary streams, they at length come to their final destination, and restore to the ocean those waters which had originally been taken from it by evaporation. Throughout the whole of this process the only principle in the operation is the tendency of liquid to find its level.

In some cases, the rain which is lodged on elevated grounds meets a soil of a spongy and porous nature, or one which by various crevices and interstices is pervious by water. In such cases the liquid often passes to very great depths before encounters a barrier formed by an impenetrable stratum. When it does, and is confined, it is subject to a considerable hydrostatic pressure from the water which fills the more elevated veins and channels by which it is fed. This pressure frequently forces the water to break a passage through the surface, and

it gushes out into a spring, which ultimately enlarges into a tributary stream of some river. In some cases the water which is filtered through the earth is confined by impenetrable barriers, in subterraneous reservoirs; barriers, the strength of which exceeds the hydrostatic pressure. If the ground perpendicularly above such a barrier be opened, and a pit sunk to such a depth as will penetrate those strata of the earth which are impervious to water, the liquid in the subterraneous reservoir, having then free admission to the pit, will rise in it until it attain the level which it has in the channels from which it is supplied. If this level be above the surface of the ground, it will have a tendency to rush upwards, and, if restrained by proper means, may be formed into a *fountain*, from which water will always flow by simply opening a valve, or cock. If the level of the source be nearly equal to that of the mouth of the pit, the water will rise to that level, and there stand; it will form a *well*. If the level of the source be considerably below the mouth of the pit, the water will not rise in the pit beyond a certain height, corresponding to the level of its source. In this case, a *pump* is introduced into the pit, and the water is raised upon principles which will be explained when we come to treat of pneumatics.

The water collected in the earth in this manner by infiltration, sometimes bursts its bounds, and rushes into the bed of the sea. It is stated by Humboldt, that at the mouth of the Rio los Gartos there are numerous springs of fresh water at the distance of 500 yards from the shore. Instances of a similar kind occur in Burlington bay, on the coast of Yorkshire; in Xagua, in the island of Cuba; and elsewhere.

Those sublime natural objects, cataracts and waterfalls are manifestations of the tendency of liquids to maintain their level. When by the union of streams large quantities of water are collected at elevations considerably raised above the level of the sea, the river, whose head is thus formed, frequently encounters, in its approach to the sea, abrupt declivities, down which it is precipitated in a cataract. The heights of the cataracts of the great

rivers of the world, though commonly much exaggerated, are still such as to place these tremendous phenomena among the most appalling of natural appearances. The celebrated cataract of TEQUENDAMA, formed by the Rio Bogota, in South America was long considered to be the highest in the world, the fall having been estimated by Bouguer to be not less than 1500 perpendicular feet; Humboldt, however, has more recently found this calculation to be erroneous, and has shown that the height of the fall does not exceed 600 feet.* The stream before it approaches the precipice has a breadth of 140 feet, which immediately contracts, and at the edge of the abyss is reduced to 35 feet. The great cataracts of Niagara are well known; the breadth of the stream is 400 yards immediately before the descent, and the liquid is precipitated through the perpendicular height of 150 feet. The sound of this cataract is distinctly audible at a distance of thirteen miles.

The motion of water in rivers has a sensible effect in wearing away their beds. By this means, in the course of time, the face of a country may undergo considerable changes. The falls of Niagara are gradually changing their aspect by this cause; and it is probable that a period will come, when the bed of the stream between these falls and Lake Erie will be worn to a depth such as to drain the entire of the waters of that inland sea, and convert the space it now occupies into a fertile plain.† Such a change appears to have been already produced at the falls of the Nile at Syene, which are not at all conformable to what we learn from the ancients to have existed there in former times.

In accomplishing their descent to the level of the ocean, rivers sometimes suddenly disappear, finding through subterranean caverns and channels, a more precipitate course than any which the surface offers. After passing for a certain space thus under ground, they reappear, and flow in a channel on the surface to the sea. Sometimes their subterraneous passage becomes choked, and

* Humboldt's Researches, vol. i. p. 76.

† Brewster's Edinburgh Encycloedia, vol. xvi. p. 519.

they are again forced to find a channel on the surface. The waters of the Oronoco lose themselves beneath immense blocks of granite at the Raudal del Cariven, which, leaning against one another, form great natural arches, under which the torrent rushes with immense fury. The Rhone disappears between Seyssel and Sluys. In the year 1752, the bed of the Rio del Norte, in New Mexico, became suddenly dry to the extent of 60 leagues; the river had precipitated itself into a newly formed chasm, and disappeared for a considerable time, leaving the fine plains upon its banks entirely destitute of water. At length, after a lapse of several weeks, the subterraneous channel having apparently become choked, the river, returned to its former bed. A similar phenomenon is said to have occurred in the river Amazon, about the beginning of the eighteenth century. At the village of Puyaya, the bed of that vast river was suddenly and completely dried up, and remained so for several hours in consequence of part of the rocks, near the cataract of Rententa, having been thrown down by an earthquake.*

To be continued.

DEPARTMENT OF NATURAL HISTORY.

THE PUMA. (*Felis Concolor.*)

THIS animal, which is found in America, from Patagonia to California, is frequently called the American Lion. It is large, and uniformly of a yellow colour, and so far bears some similarity to the lion of the Old World; but it is without mane or tuft to the tail. Its length, from the nose to the root of the tail, is about five feet; and its height, from the bottom of the foot to the shoulder, twenty six-inches and a half.

The Puma lies concealed in the underwood, and does not have recourse to caverns for shelter. It ascends and descends the highest trees with swiftness and ease, though it may be considered rather as an inhabitant of the plains than of the forests. Its de-

predations are generally confined to quadrupeds of a middling size, as calves, sheep, &c. ; but against these its ferocity is more insatiable than its appetite, destroying many at an attack, but carrying away perhaps only one. If it have more than sufficient for a meal, it will cover and conceal the residue for a second repast.

D'Azara possessed a tame puma, which was as gentle as a dog, but very inactive. It would play with any one : and if an orange were presented to it, would strike it with the paw, push it away, and seize it again, in the manner of a cat playing with a mouse. It had all the manners of a cat, when engaged in surprizing a bird, not excepting the agitation of the tail ; and, when caressed, purred like that animal.

*The Puma.*

An incident occurred a few years back, not far from New-York, which disproves the assertion that the puma will not attack a man. Two hunters went out in quest of game on the Catskill mountains, in New-York, each armed with a gun, and accompanied by his dog. They agreed to go in contrary directions round the base of a hill ; and that, if either discharged his piece, the other should cross the hill, as expeditiously as possible, to join his companion. Shortly after separating, one heard the other fire, and hastened

to his comrade. After searching for him for some time without effect, he found his dog dead and dreadfully torn. Knowing from this circumstance that the animal shot at was large and ferocious, he became more anxious, and assiduously continued his search for his friend; when his attention was suddenly directed, by a deep growl, to a large branch of a tree, where he saw a puma couching on the body of the man, and directing his eyes toward him, apparently hesitating whether to descend and make an attack on the survivor, or to relinquish its prey and take to flight. Conscious that much depended on celerity, the hunter discharged his piece, and the puma, mortally wounded, and the body of the man, fell together from the tree. The surviving dog then flew at the fallen beast, but a single blow from its paw laid the dog dead by its side.

Finding that his comrade was dead, and that there was still danger in approaching the wounded animal, the man prudently retired, and brought several persons to the spot, where the unfortunate hunter, the puma, and both the dogs, were all lying dead together.

Major Smith witnessed an extraordinary instance of the great ferocity of this animal, when engaged with its food. A puma, which had been taken and was confined, was ordered to be shot, which was done immediately after the animal had received its food: the first ball went through his body, and the only notice he took of it was by a shrill growl, doubling his efforts to devour his food, which he actually continued to swallow with quantities of his own blood, till he fell.

Notwithstanding such instances of the violence of disposition of this animal, it is very easy to be tamed. The same gentleman saw another individual that was led about with a chain, carried in a waggon, lying under the seat upon which his keeper sat, and fed by flinging a piece of meat into a tree, when his chain was coiled round his neck, and he was desired to fetch it down; an act which he performed in two or three bounds, with surprising ease and docility.

A tame puma, which died recently, was some time

in the possession of Mr. Kean, the actor. It was quite docile and gentle. After the death of this animal, it was discovered that a musket ball, in all probability, had injured its skull, which was not known in its lifetime.

CUVIER'S *Animal Kingdom*.

PARADOXICAL ANIMALS.

Two very curious animals exist, which though neither properly quadruped, bird, nor reptile, respectively combine, to a certain degree, some portion of the nature of all.

Dr. Shaw was the first naturalist who introduced these singular creatures to notice, and Sir Everard Home was the first comparative anatomist who described the internal structure. The zoologists were much puzzled in allotting them a place in their respective systems, and they have been variously classed and named by the English and French naturalists.

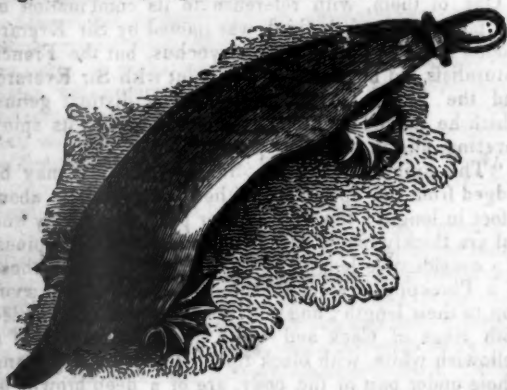
One of them, with reference to its combination of the porcupine and the bird, was named by Sir Everard Home, the Porcupine Ornithorynchus, but the French naturalists did not agree on this point with Sir Everard, and the Baron Cuvier established a distinct genus, which he named ECHIDNA, with reference to its spiny covering, and in which he placed it.

"This animal," says Dr. Shaw, "so far as may be judged from the specimens hitherto imported, is about a foot in length; the whole upper parts of the body and tail are thickly coated with strong and very sharp spines, of a considerable length, and perfectly resembling those of a Porcupine, except that they are thicker in proportion to their length; and that, instead of being encircled with rings of black and white, they are mostly of a yellowish white, with black tips. The head, legs, and whole under part of the body, are of a deep brown, or sable, and are thickly coated with strong close-set bristly hair. The tail is extremely short, slightly flattened at the tip, and coated at the upper part of the base with spines equal in length to those of the back,

and pointing upwards. The snout is long, and perfectly resembling that of the Great Ant-eater, having only a very small opening at the tip, from whence is protruded a long tongue. The nostrils are small, and seated at the extremity of the snout. The eyes are very small and black, with a pale blue iris. The legs are short and thick, and are each furnished with five rounded broad toes; on the fore-feet are five very long and blunt claws.

"The Echidna has been found principally in Van Dieman's Land, and some of the neighbouring islands; it lives on insects, which, like the Ant-eater, it secures by means of its long and sticky tongue. It burrows in the earth, and appears, like the Hedgehog, to have the faculty of assuming a spherical shape, and thus opposing its spines to any hostile attack. We are, however, as yet, but little informed on the subject of its habits, number of young, &c."

The name of the second, of which we give an engraving, has also been matter of difference.



The Ornithorynchus.

Dr. Shaw was also the first describer of this animal; he named it the *Duck-billed Platypus*; but Sir

Joseph Banks having shortly after sent a specimen to Blumenbach, that eminent physiologist preferred the name *Ornithoryncus*, for the newly-discovered creature; the merited celebrity of the German writer prevailed, and the genus has retained the name of his choosing almost universally

"Of all the mammalia yet known," says Dr. Shaw, "this seems the most extraordinary in its conformation, exhibiting the perfect resemblance of the beak of a duck engrafted on the head of a quadruped. So accurate is the similitude, that, at first view, it naturally excites the idea of some deceptive preparation by artificial means, the very manner of opening, and other particulars of the beak of a duck, presenting themselves to the view; nor is it without the most minute and rigid examination that we can persuade ourselves of its being the real beak or snout of a quadruped.

"The body is depressed, and has some resemblance to that of an Otter in miniature. It is covered with a very thick, soft, and beaver-like fur, and is of a dark brown above, and of a white beneath; the head is flattish, and rather small than large; the mouth, or snout, as before observed, so exactly resembles that of some broad-billed species of duck, that it might be mistaken for such; round the base is a flat, circular membrane, somewhat deeper or wider below than above. The tail is flat, furry like the body, gradually lessens to the tip, and is about three inches in length.

"The length of the animal, from the tip of the beak to that of the tail, is thirteen inches; of the beak, an inch and a half. The legs are very short, terminating in a broad web, which on the fore-feet extends to a considerable distance beyond the claws. On the fore-feet are five claws, straight, strong, and sharp-pointed. On the hind-feet are six claws, longer and more inclining to a curve than those on the fore-feet. The nostrils are small and round, and situated about a quarter of an inch from the tip of the bill. The ears are placed about an inch beyond the eyes, they appear like a pair of oval holes of the eighth of an inch in diame-

ter. On the upper part of the head, on each side, a little beyond the beak, are situated two smallish oval white spots; in the lower part of each are imbedded the eyes, or at least the parts allotted to the animal for some kind of vision; for, from the thickness of the fur, and the smallness of the organs, they seem to have been but obscurely calculated for distinct vision, and are probably like those of moles, and some other animals of that tribe.

"In the place of teeth, the edges of the beak are furnished with fibres, simply attached to the gum; the tongue is short, and furnished with two horny points.

"The *Ornithorynchi* have hitherto been found only in the rivers in the vicinity of Port Jackson, especially the river Nepean, on the eastern coast of New Holland. Those found in 1815, in Campbell River, and the river Macquarie, beyond the Blue Mountains, are larger than those before known, though they do not appear to differ specifically.

"These animals are expert swimmers, and seldom quit the water; on shore, they crawl rather than walk, occasioned by the shortness of the limbs and comparative length of the body. Nothing certain is known as to their food; but the singular resemblance of their beak to that of ducks, induces a strong probability that, like these birds, they live on worms and aquatic insects."

WHAT shall we do, when our favours are requited with ingratitude? Repeat them; though they should seem to be repeated in vain. Let us persevere in our kindness, even when it may appear to be thrown away. There is no reason why a crowd of ungrateful receivers should make us unwilling to deserve their gratitude. Let us persevere in showing kindness, even after we despair of meeting with a grateful return. Cease not from well doing, but pursue the undeviating course of the just.—SENECA.

THE TEA PLANT.



The tea plant is a native of China or Japan, and probably of both. It has been used among the natives of the former country from time immemorial. It is only in a particular tract of the Chinese empire that the plant is cultivated; and this tract, which is situated on the eastern side, between the 30th and 33d degrees of north latitude, is distinguished by the natives as "the tea country." The more northern part of China would be too cold; and further south, the heat would be too great. There are, however, a few small plantations to be seen near to Canton.

The Chinese give to the plant the name of *tcha*, or *thé*. It is propagated by them from seeds, which are deposited in rows, four or five feet asunder; and so uncertain is their vegetation, even in their native climate, that it is found necessary to sow as many as seven or eight seeds in every hole. The ground between each row is always kept free from weeds, and the plants are not allowed to attain a higher growth than admits of the leaves being conveniently gathered. The first crop of leaves is not collected until the third year after sowing; and when the trees are six or seven years old, the produce

becomes so inferior that they are removed to make room for a fresh succession.

The flowers of the tea tree are white, and somewhat resemble the wild rose of our hedges ; these flowers are succeeded by soft green berries or pods, containing each from one to three white seeds. The plant will grow in either low or elevated situations, but always thrives best and furnishes leaves of the finest quality when produced in light stony ground.



Tea gathering—from a Chinese drawing.

The leaves are gathered from one to four times during the year, according to the age of the trees. Most commonly there are three periods of gathering ; the first commences about the middle of April ; the second at Midsummer ; and the last is accomplished during August and September. The leaves that are earliest gathered are of the most delicate colour and most aromatic flavour, with the least portion of either fibre or bitterness. Leaves of the second gathering are of a dull green colour, and have less valuable qualities than the former ; while those which are last collected are of a dark green, and possess an inferior value. The quality is further influenced by the age of the wood on which the leaves are borne, and by the degree of exposure to which they have been accustomed : leaves from

young wood, and those most exposed, being always the best.

The leaves, as soon as gathered, are put into wide shallow baskets, and placed in the air, or wind, or sunshine, during some hours. They are then placed on a flat cast iron pan, over a stove heated with charcoal, from a half to three quarters of a pound of leaves being operated on at one time. These leaves are stirred quickly about with a kind of brush, and are then as quickly swept off the pan into baskets. The next process is that of rolling, which is effected by carefully rubbing them between men's hands; after which they are again put, in larger quantities, on the pan, and subjected anew to heat, but at this time to a lower degree than at first, and just sufficient to dry them effectually without risk of scorching. This effected, the tea is placed on a table and carefully picked over; every unsightly or imperfectly dried leaf that is detected being removed from the rest, in order that the sample may present a more even and a better appearance when offered for sale.

The names by which some of the principal sorts of tea are known in China, are taken from the places in which they are produced; while others are distinguished according to the periods of their gathering, the manner employed in curing, or other extrinsic circumstances. It is a commonly received opinion, that the distinctive colour of green tea is imparted to it by sheets of copper, upon which it is dried. For this belief there is not, however the smallest foundation in fact, since copper is never used for the purpose. Repeated experiments have been made to discover, by an unerring test, whether the leaves of green tea contain any impregnation of copper, but in no case has any trace of this metal been detected.

The Chinese do not use their tea until it is about a year old, considering that it is too actively narcotic when new. Tea is yet older when it is brought into consumption in England, as, in addition to the length of time occupied in its collection and transport to this

country, the East-India company are obliged by their charter to have always a supply sufficient for one year's consumption in their London warehouses; and this regulation, which enhances the price to the consumer, is said to have been made by way of guarding in some measure against the inconveniences that would attend any interruption to a trade entirely dependant upon the caprice of an arbitrary government.

The people of China partake of tea at all their meals, and frequently at other times of the day. They drink the infusion prepared in the same manner as we employ, but they do not mix with it either sugar or milk. The working classes in that country are obliged to content themselves with a very weak infusion. Mr. Anderson, in his Narrative of Lord Macartney's Embassy, relates that the natives in attendance never failed to beg the tea-leaves remaining after the Europeans had breakfasted, and with these, after submitting them again to boiling water, they made a beverage which they acknowledge was better than any they could ordinarily obtain. *Abridged from "Vegetable Substances used for Food."*

THE BIRD SPIDER.—(*Mygale avicularia*.)

This creature is found in considerable numbers in Surinam and the neighbouring countries; it is extremely formidable in appearance, and if any reliance could be placed on the accounts of the natives, equally to be dreaded in reality. Its colour is of a reddish or brownish black, and the texture of the skin like the softest velvet; its nest, although much larger, is in form like the cocoon of the silk-worm, and in the same manner spun by the tenant itself.

Unfortunately for spiders of all descriptions, their form and appearance have every where been productive of so much dislike, that all their bad qualities have been exaggerated, and their useful or interesting properties overlooked. No one can have noticed the formation of



THE BIRD SPIDER.

a spider's web, without having been struck with the surprising skill displayed by the creature in its construction. The most experienced sailor could not contrive an arrangement of cordage, so perfectly adapted to the purposes of strength and support, as that employed by the spider in stretching its slender net across the garden pathway. Its utility may be appreciated by those who, in the hot climates where the species here represented are found, have noticed the ravages committed by a large kind of ants, which appear in myriads, and commit great devastation. Upon these, the Bird Spider preys, and keeps the numbers of these destructive insects in some manner within bounds.

In want of this, its more natural food, the spider destroys the eggs of the humming-bird, and sometimes the birds themselves ; and from this habit it takes its name.

Spiders are described by naturalists as distinguished from other groups of animals that approach them in form, by all possessing eight legs ; having their chest united to the head, and their whole body consequently consisting of two divisions, instead of being formed of three, as in insects ; the want of the antennæ or horns, which are found in these last ; and the possession of feelers arising near the mouth, armed at the end with a hook, containing, in some instances, a poisonous liquid, with which they can destroy their prey. They are also provided with from six to eight eyes, arranged in different forms. The Bird Spider, although very destructive among the ants, as already noticed, is sometimes attacked singly by numbers of these warlike insects, and suddenly killed.

POWER OF STEAM.—It is on the rivers, and the boatman may repose on his oars ; it is in highways, and begins to exert itself along the courses of land-conveyance ; it is at the bottom of mines, a thousand feet below the earth's surface ; it is in the mill, and in the workshops of the trades. It rows, it pumps, it excavates, it carries, it draws, it lifts, it hammers, it spins, it weaves, it prints.—*From Webster's Lectures.*

THE PROOFS OF THE BEING OF A GOD, FROM THE MANIFESTATION OF DESIGN THROUGH THE WHOLE OF EXTERNAL NATURE.

"I read His awful name emblazon'd high,
With golden letters on the illumin'd sky;
Nor less the mystic characters I see
Wrought in each flower, inscribed on every tree.
In every creature own his forming power,
In each event, his providence adore."

Survey this beautiful and magnificent system, this various and immense world, contemplate the azure vault of heaven, and its resplendent and, to appearance, numberless orbs, rolling with the most regular yet diversified motions; behold the sun appointed to rule the day, and the moon and the stars to rule the night. The different parts of the planetary system are placed at such convenient distances from the great fountain of vital warmth, and of exhilarating light, as to be destroyed neither by heat nor by cold; neither to be overwhelmed by effulgence, nor to be involved in darkness. Our earth is encompassed with an atmosphere so wonderfully contrived, as at once to support clouds for fertilizing rains, to afford winds for refreshment, the expulsion of noxious vapours, and navigation; to furnish vital breath to animals, to convey sound, and to transmit the rays of light. Seas and oceans, supplying vapours for the humid stores of the clouds, and for the sources of rivers, expand their liquid surface to facilitate the intercourse of men, and teem with inhabitants, subservient to their nourishment, or their pleasure. The climates of the earth, though agreeably diversified, are nevertheless respectively provided with just proportions of day and of night, of summer and winter, and the other changes of season. The face of the globe is exquisitely adorned with the various and inimitable beauties of flowers, and plants, and trees, and with that verdant attire, which is, in spring, so peculiarly cheering and animating.

"Lo! here thy wondrous skill arrays
The earth in cheerful green;
A thousand herbs thy art displays,
A thousand flowers between."

These beauties acquire fresh lustre from the diversity of the situations in which they are exhibited, from the contrast of hill and valley, lawn and forest, and all that rich variety of prospect which so often arrests the eye and exalts the soul. These elements of earth, air, and water, abound with animals, as different in species, as they are infinite in multiplication, all employed in the pursuit and enjoyment of pleasures, adapted to their respective natures and circumstances; and, though the individuals are constantly perishing, succession is continually maintained, and the species remain, on the whole, entire and undiminished. Who then can behold this vast system of the universe, without a high degree of admiration, mixed with awe and reverence, to the Supreme Being.

"Thy glories blaze all nature round,
And strike the wondering sight,
Through skies, and seas, and solid ground,
With terror and delight."

From the greatest to the least object that we behold; from the orient star that glitters in the heavens, to the insect that creeps upon the ground; from the awful thunder that rolls in the skies, to the flower that flourishes in the field; all things testify a profound and mysterious wisdom, a mighty and all-powerful hand, before which we must tremble and adore.

"Infinite strength and equal skill
Shine through thy works abroad;
Our souls with vast amazement fill
And speak the builder God."

We are surrounded with astonishing magnificence on every hand. We walk through the earth as through the apartments of a splendid palace, which ought to fill every spectator with wonder and delight. All the works which our power can erect, all the ornaments which human art can contrive, are feeble and trifling in comparison with those glories which nature every where presents to our view. The immense arch of the heavens, the splendour of the sun in his meridian bright-

ness, or the beauty of his rising and setting hours, the rich landscape of the fields, and the boundless expanse of the ocean, are scenes which mock every rival attempt of human skill and labour.

"Thy hand how wide it spreads the sky,
How glorious to behold!
Ting'd with a blue of heavenly dye,
And starr'd with spangling gold."

Nor is it only in the splendid appearances of nature, but amidst its rudest forms, that we trace the hand of the Divinity. In the solitary desert: and the lofty mountain, the roaring torrent, and the aged forest; though there be nothing to cheer, there is much to strike the mind with awe and reverence, to give rise to those solemn and sublime sensations which elevate the heart to an Almighty, All-creating Power.

"There the rough mountains of the deep
Obey thy strong command;
Thy breath can raise the billows steep,
Or sink them to the sand."

In short we can no where cast our eyes around us, without viewing what is sufficient to awaken us to a reverence of the Deity. This reverence becomes the more profound, that the Great Being who is the object of it, is to us invisible, and, in certain senses, unknown. We may seek to discover him, but he hides himself from us, (Job xxiii. 8, 9.) We know that he is not far from every one of us, yet he shrouds himself in the darkness of his pavilion; he answereth from the secret place of thunder, (Psalm lxxxi. 7.) Before this incomprehensible Being, this God terrible and strong, we become in a manner annihilated; we feel the contrast, and "rejoice with trembling." For we know that the mighty arm which upholds the universe, and which surrounds us with wonders on every side, can in a moment crush us to dust, if we become objects of displeasure to heaven. Awful are the operations of the Divine power, which we are constantly beholding in the moral as well as in the natural world. The Almighty rules among the nations as well as over individuals; on his pleasure de-

pend all the great revolutions of the earth; the interpositions of his providence are frequently apparent to the world, in bringing down the mighty, and raising up the fallen. Both the law and the gospel, the works of nature and the conduct of Providence, unite in uttering that solemn voice which ought frequently to resound in our ears: "Be still, and know that I am God; I will be exalted among the heathen; I will be exalted in the earth." Give unto the Lord the glory due unto his name. Which doeth great things and unsearchable; marvelous things without number." The more philosophy has enlarged our views of nature, the more it has been discovered that, throughout the whole creation, there is no useless profusion of magnificence, but that every thing has been rendered subservient to the welfare of the world. Insensible must that heart be which feels no gratitude to that Sublime Being who has brought him forth to enjoy this wonderful scene. In this vast system of the universe, there are many things beyond our comprehension. As yet, perhaps, we see no more than the rise of the Divine Government; the beginning of a great plan, which is not to be completed until the courses of ages shall end. Presume not, therefore, to exalt thy weak reason against the revelations of heaven. Think with awe, and speak with caution, of what is so much above thee. Wait till events are unfolded; submit and adore! Let no voice be heard from thee but this, "Thou hast made me, O God, and I am thine: for in thee I live, and move, and have my being. Wherever thou commandest me to go, I follow. Whatever thou appointest me to suffer, I bear without a murmur. It is my part to persevere in duty, the rest I leave to thee, whose wisdom I revere, whose goodness I have so often experienced, in whom, therefore, I repose implicit trust, that all shall end well, and the righteous be made finally happy."

TRUTH is the most powerful thing in the world, since fiction can only please by its resemblance to it.—*Shaftebury.*

BELSHIAZZAR.

BY THE REV. GEORGE CHOLY.

Horn of an Empire's overthrow !
The Princes from the feast were gone,
The Idol flame was burning low ;—
'Twas midnight upon Babylon.

That night the feast was wild and high ;
That night was Sion's gold profaned ;
The seal was set to blasphemy ;
The last deep-cup of wrath was drained.

'Mid jewelled roof and silken pall,
Belshazzar on his couch was flung ;
A burst of thunder shook the hall—
He heard—but 'twas no mortal tongue :—

'King of the East, the trumpet calls,
That calls thee to a tyrant's grave ;
A curse is on thy palace walls—
A curse is on thy guardian wave ;

'A surge is in Euphrates' bed,
That never filled its bed before,
A surge, that, ere the morn be red,
Shall load with death its haughty shore.

'Behold a tide of Persian steel :
A torrent of the Median ear ;
Like flame their gory banners wheel ;
Rise, King, and arm thee for the war !

Belshazzar gazed ; the voice was past—
The lofty chamber filled with gloom ;
But, echoed on the sudden blast,
The rushing of a mighty plume.

He listened ; all again was still ;
He heard no chariot's iron clang ;—
He heard the fountain's gushing rill,
The breeze that through the roses sang.

He slept :—In sleep wild murmurs came ;
A visioned splendour fired the sky ;
He heard Belshazzar's taunted name :
He heard again the Prophet cry—

'Sleep Sultan ! 'tis thy final sleep ;
Or wake, or sleep, the guilty die.
The wrongs of those who watch and weep,
Around thee and thy nation rise.'

He started, 'mid the battle's yell,
He saw the Persian rushing on ;
He saw the flames around him swell ;—
Thou'rt ashes ! King of Babylon.



TEQUENDAMA CATARACT.

Waterfall on the Tequendama mts. near Bogotá, Colombia. The water falls from a height of about 100 feet into a pool below. The surrounding country is very fertile and the climate is very healthy.

THE TEQUENDAMA CATARACT

THIS celebrated fall is upon the River Bogota, near the town of Santa Fé, in the Colombian Republic. At a little distance above the fall, the river is about 140 feet wide; but, as it approaches the chasm through which it dashes, its breadth is suddenly diminished to thirty-five feet. Thus contracted, the current gains accumulated force, and rushes down a perpendicular rock, at two bounds, to the depth of 600 feet, into a dark unfathomable abyss, out of which the river again issues, under the name of *Rio Meta*. The face of the rock, which finishes and borders the vast plain of Bogota, near the cataract, is so steep that it occupies three hours in the descent: and the basin, or gulf, into which the water is precipitated, cannot be approached very closely, as the rapidity of the stream, the deafening noise of the cataract, and the dense mass of spray, render it impossible to get nearer the edges of the abyss than 400 or 500 feet. The loneliness of the spot, the tumultuous roar of the waters, and the beauties of the surrounding vegetation, render this one of the wildest and most picturesque scenes of the Andes.

SELF-EDUCATION.—Much less of success in life is in reality dependent upon accident, or what is called luck, than is commonly supposed. Far more depends upon the objects which a man proposes to himself; what attainments he aspires to; what is the circle which bounds his visions and thoughts; what he chooses, not *to be educated for*, but *to educate himself for*; whether he looks to the end and aim of the whole of life, or only to the present day or hour; whether he listens to the voice of indolence or vulgar pleasure, or to the stirring voice in his own soul, urging his ambition on to laudable objects.

NOTHING is more easy than to represent as impertinences any part of learning that has no immediate reference to the happiness or convenience of mankind.

BIOGRAPHICAL SKETCHES.



COLUMBUS.

THIS illustrious individual, decidedly one of the greatest men mentioned in history, was the son of a poor wool-comber of Genoa, in which city he was born, about the year 1435. Even in his childhood, he evinced a strong passion for geographical knowledge, and an irresistible inclination for the sea, and at fourteen years of age he began his career as a navigator, in the Mediterranean. Portugal was at this period, pre-eminent in Europe, for maritime enterprise; and thither, Columbus went in search of employment. At Lisbon he found relatives and friends, and here he married a daughter of Palestrello, a distinguished navigator, and the author of several Maps and Charts. The study of these materials, having confirmed him in an opinion he had long entertained, that the other side of the globe contained land, belonging to Eastern Asia, and connected with India, a country as yet but little known, he determined to make a voyage, in order to test the truth of his theory; and applied, but in vain, to his native city, Genoa, for assistance. Equally fruitless was an application which he made to the king of Portugal. He now determined to apply to the Spanish court; and about the same time, his brother sailed for England, on a similar errand, but was captured by pirates. Ferdinand and Isabella at this time filled the Spanish throne; to them he explained

his plans, and, after an eight years' struggle with the obstacles thrown in his way by ignorance and malice, he at last succeeded in obtaining three small vessels, and one hundred and twenty men. Two of the vessels were light barks, called *caravals*, like the coasting craft of modern days, with forecastles and cabins for the crews, but without a deck in the centre. These caravals were called the *Pinta* and the *Niña*, and were commanded by two brothers, named Pinzon. The third vessel, on board of which was Columbus himself, was completely decked. The dignity of high admiral and Viceroy of all the countries he might discover, was conferred on him; the former title to be hereditary in his family; and a share in the profits of the voyage was secured to him.

It was early in the morning of Friday, the 3d of August, 1492, that Columbus set sail from the Port of Palos. Eighteen years had elapsed since he had first conceived the idea of this enterprise. Most of that time had been spent in almost hopeless solicitation, amidst poverty, neglect, and ridicule; the prime of his life had been wasted in the struggle, and, when his perseverance was finally crowned with success, he was in the fifty-sixth year of his age. Nor should it be forgotten, that it was to Isabella alone he was indebted for the means of executing his project, which had been coldly rejected by the cautious Ferdinand.

Having taken in fresh water at the Canary isles, he sailed into an ocean, never navigated before. The courage of Columbus never faltered; but when twenty-one days had elapsed, without the sight of any land, the hearts of his men began to sink. It was certain, they said, that they should perish, and their visionary commander should be forced to return. Some of them even proposed to throw him overboard; and Columbus had to exert all the powers of his daring and commanding spirit, to prevent an open rebellion. The sea now appeared covered with weeds, and showed signs of shoals and rocks. Numbers of birds were also seen. Columbus sailed in the direction from which they flew, and for some days the voyage was continued with revived

spirits; but at last the dissatisfaction of the crews broke out into open violence. Columbus, after endeavouring in vain to pacify his men by promises, at last assumed a different tone, and told them it was useless to murmur, that he was determined to persevere. Fully convinced that he must be near land, he promised a reward to whoever should discover it. All hands remained on deck during the night, and Columbus himself first saw the land, and pointed it out to some of his friends. About midnight the cry of *Land* was raised from the *Pinta*, which from her superior sailing had kept ahead of the other vessels. On landing, Columbus threw himself on his knees and kissed the earth, returning thanks to God. The natives collected round him in silent astonishment, and his men, ashamed of their disobedience and distrust, threw themselves at his feet begging his forgiveness. Columbus drawing his sword planted the royal standard, and, in the name of his sovereigns, took possession of the country, which in memory of his preservation he called St. Salvador. He then received the homage of his followers as Admiral and Viceroy and representative of the sovereigns. Being informed by the natives that there was a rich gold country towards the south, Columbus directed his course thither, and discovered Cuba, on the 28th of October, and Hispaniola on the 6th of December. March 15th, he re-entered the port of Palos, amid the thunders of cannon, the ringing of bells, and the acclamations of the multitude. He hastened to Barcelona, where the court then was, and entered the city in a triumphal procession, with the productions of the newly discovered countries carried before him. A chair was placed for him next the throne, and seating himself, he gave an account of his discoveries. He was created a Grandee, and every mark of royal favour was lavished on him. September 25th, 1493, Columbus, with a large fleet, sailed from Cadiz on his second voyage to the new world; but was soon obliged to return, to vindicate himself against the malicious charges of his numerous enemies. In 1498 he sailed with six vessels on his third voyage. Colum-

bus on his arrival at St. Domingo, found the colony in a state of confusion; however, he soon restored tranquility by the prudence and firmness of his measures, and then, in order to supply the deficiency of labourers, he distributed the land and the inhabitants among his people, subjecting the natives to the arbitrary will of their masters, and thus laying the foundation of that system of slavery which has continued to our own day. His enemies at home, in the mean time, endeavoured to convince the sovereigns that he had abused his powers, and designed to make himself independent; till at last even Isabella yielded to the wishes of Ferdinand, who had long lent a willing ear to the slanders. An officer was sent to Hispaniola with power to call the Viceroy to an account. Columbus was summoned before him and put in irons. His two brothers were treated in the same manner, and all three were sent to Spain, accompanied with written charges drawn up from the statements of their bitterest enemies.

Columbus endured this outrage with noble equanimity, and on his arrival at Cadiz, wrote to a lady of the court, vindicating his conduct, and describing, in eloquent and touching language, the treatment he had received. Isabella was moved to tears, and Columbus was received with the same distinction as formerly. The monarchs, however, never fulfilled their promises of justice, and after waiting two years, Columbus sailed on his fourth voyage, which was a succession of misfortunes and disappointments, and from which he returned to Spain sick, dispirited, and exhausted. The death of Isabella soon followed, and he urged in vain on Ferdinand the fulfilment of his contract. After two years more of illness, humiliation and despondency, Columbus died, at Valladolid, May 20th, 1506, in the seventieth year of his age. His remains were transported, according to his will, to the city of St. Domingo; but, in 1795, on the cession of the island of Hispaniola to the French, they were removed with great pomp to the cathedral of Havana, in Cuba. The chains he had worn he kept hanging in

his cabinet, and requested when he died, that they might be buried in his grave.

In his person, Columbus was of an engaging presence, tall, well formed, and muscular, and of an elevated and dignified demeanour. His countenance was remarkable for an air of authority. Care and trouble had turned his hair white at thirty years of age. He was simple in his tastes, eloquent in discourse, engaging and affable with strangers, and of great amiableness and suavity in domestic life. Throughout his life he was noted for a deep and solemn sense of piety, and a strict attention to the offices of religion. The treatment of his court showed that ingratitude to public benefactors is not confined to republics.

THE ALPINE FLOWERS.

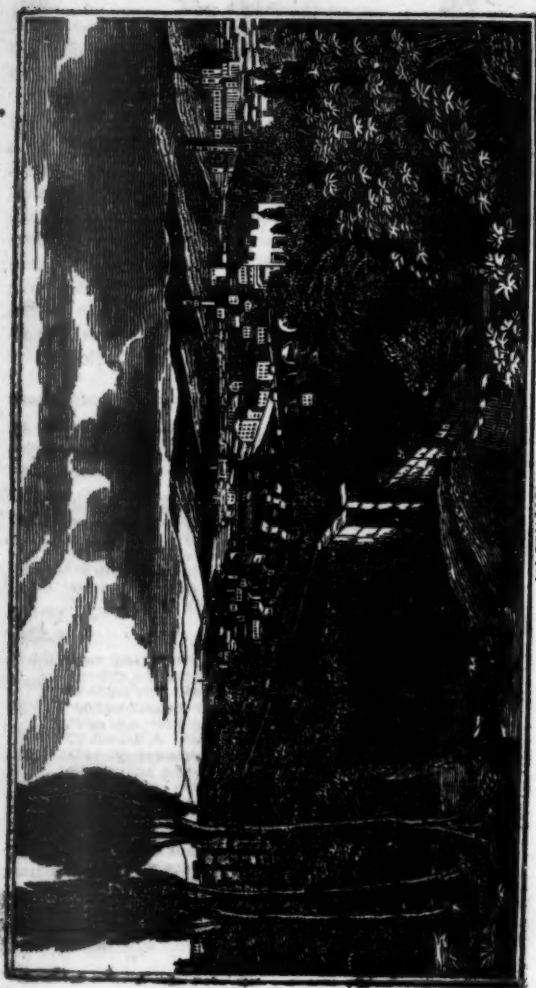
By MRS. SIOURNEY.

Meek dwellers 'mid yon terror-stricken cliffs!
With brows so pure, and incense-breathing lips,
Whence are ye!—Did some white-winged messenger
On Mercy's missions trust your timid germ
To the cold cradle of eternal snows?
Or, breathing on the callous icicles
Bid them with tear-drops nurse ye?—

—Tree nor shrub
Dare that drear atmosphere; no polar pine
Uprears a veteran front; yet there ye stand,
Leaning your cheeks against the thick-ribbed ice,
And looking up with brilliant eyes to Him
Who bids you bloom unblanched amid the waste
Of desolation. Man, who, panting, toils
O'er slippery steeps, or, trembling, treads the verge
Of yawning gulfs, o'er which the headlong plunge
Is to eternity, looks shuddering up,
And marks ye in your placid loveliness;
Fearless, yet frail—and, clasping his chill hands,
Blesses your pencilled beauty. 'Mid the pomp
Of mountain summits rushing on the sky,
And chaining the rapt soul in breathless awe,
He bows to blind you drooping to his breast,
Whales your spirit from the frost-winged gale,
And freer dreams of heaven.

ETOWHACHEE





FLORENCE.